Chapter 5 Social Impacts

5.1 Introduction

This chapter discusses how to analyze social impacts as part of the community impact assessment process. Social impacts are the effects of the project that disrupt the normal daily functions of a community or neighborhood. Effects generally analyzed under the heading of social impacts include effects on community cohesion, including community facilities and services, access and circulation, and parking.

Frequently, the social effects of transportation projects are borne by the communities, neighborhood, and areas that lie near the highway corridor, while the benefits are shared by a larger population at the city or regional level. For this reason, analysis of social impacts is generally directed at the neighborhood level, where the majority of negative impacts would be felt.

Although the terms "community" and "neighborhood" are widely used, they mean different things to different people. A classic textbook definition of *community* is: a population whose members are interdependent and who perform many activities that satisfy the population's economic and social needs. In simpler terms, a community is a population rooted in one place, where the daily life of each member involves contact with and dependence on other members. It has generally been a characteristic of our society that people form relationships and establish social organizations on the basis of two things: certain distinctions they perceive about themselves, such as ethnicity, religion, or other demographic characteristics; and spatial proximity. Neighborhoods are a subset of the geographic community and are based on personal interactions among residents.

The boundaries of communities or neighborhoods can often be delineated by physical barriers (highways, waterways, open spaces, etc.), activity centers, home values, selected demographic characteristics (ethnic groups), and (through surveys of) residents' perceptions. Reports and maps developed by local planning agencies can also help define spatial boundaries.

5.2 Analyzing Social Impacts

The effects of a transportation project on a community are experienced in different ways by different members of the community. A project that widens a roadway and adds sidewalks and landscaping may make a neighborhood or commercial center more inviting to most people; it may make crossing the road more difficult for the elderly and disabled, and may displace parking essential to the economic success of a business. Therefore, when analyzing social impacts, the analyst should take a holistic approach and attempt to describe the way impacts are interrelated and how the benefits and burdens of the project are distributed through the community and larger regional context. The following are the basic steps in analyzing social impacts as part of the community impact assessment process.

1. Measure the cohesiveness of the community and determine how community cohesion would be affected.

2. Assess the changes that would occur on access and circulation, as well as on parking, with and without the project.
3. Develop measures to avoid, minimize, and/or mitigate potential adverse effects.

5.2.1 Effects on Community Cohesion

The assessment of a transportation project's effects on community cohesion involves determining whether community cohesion exists in the neighborhoods that would be affected by the project, and if so, to what extent would the project damage that cohesiveness. In many cases, trained social scientists and other consultants are best able to conduct this type of work for Caltrans or its local agency transportation partners.

Is the Community Cohesive?

Community cohesion is the degree to which residents have a "sense of belonging" to their neighborhood, a level of commitment of the residents to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. Cohesion refers to the degree of interaction among the individuals, groups, and institutions that make up a community. Local public officials and community leaders, such as clergy members, can provide valuable information and insight into the community's makeup and cohesiveness.

The impacts of transportation projects tend to be more disruptive to cohesive communities. Generally, the effect of a transportation facility located through an older, established neighborhood is more severe than one located through an area where the housing changes ownership every three to five years. There also may be multi-family or renter-occupied areas that exhibit these same qualities (for instance, where recent immigrants or low-income people may have clustered), although these may be somewhat more difficult to detect through traditional research means.

As with other community impacts discussed in this handbook, the level of effort expended on the analysis should be commensurate with the severity of the impact, particularly as perceived by the potentially affected community. If a project is expected to be extremely disruptive of community routines, such as a project that would displace a large number of homes and/or businesses, then a more rigorous approach to assess community cohesion may be appropriate. If on the other hand, the project is unlikely to result in disruption of community or neighborhood routines, then there is little reason to expend a great deal of time or effort in developing a quantitative measure of community cohesiveness.

Measuring Community Cohesion

Several analytical tools are available for assessing community cohesion. One of the traditional tools for measuring community cohesion by transportation departments across the country is by means of a "stability index" or mathematical formula with numerical variables. The stability index is represented by the following formula.

Percent households in same housing unit	+	Percent Owner-Occupied Units	+	Percent Single Family Units	=	Stability Index

In more recent years, the stability index has received criticism from some community planners for being too narrow—that "cohesiveness" is not something that can be made a part of a formula. Essentially, the stability index is based on the assumption that the longer people live in a community, the more committed they become to it and the more cohesive the community. The stability index may be most useful when it is viewed as just a rough indicator of neighborhood stability. More information on the stability index can be obtained by contacting the community impact assessment specialist within the Caltrans Headquarters Division of Environmental Analysis.

If a project is expected to be extremely disruptive to a community, a more rigorous analytical approach may be warranted. Commercial products based on the Identity Structure Analysis (ISA) methodology are available that provide information on the following topics (Weinreich and Saunderson 2002):

- The extent to which communities share common values and beliefs
- Factors on which one section of the community feels other groups are different or they themselves are seen as different
- Different groups' perceptions of community facilities, such as community centers, schools, libraries, religious institutions, and local government
- Trends in perceptions, such as the extent to which different groups feel that their situation is getting better or worse

Other methods to help determine community cohesion include conducting interviews with community leaders and members of community-oriented ad hoc committees, interviewing managers of neighborhood service organizations, having discussions with planning officials, and perusing newspaper articles regarding citizens' views of their community and neighborhoods.

Another promising methodological approach to measure the psychological sense of neighborhood at the community level is the Likert scale survey. Likert scale surveys can be affordably and reliably administered to assess the cohesiveness or "sense of community" at the more immediate neighborhood level. The Likert scale is used commonly in social research. The survey evaluates using an odd number scale to quantify the community's agreement to a variety of topics. Below is a sample of what a Likert scale survey might contain.

Please rate your agreement with the following statements using the 1–5 scale.

	1 = Strongly disagree	2 = Disagree	3 = Undecided	4 = Agree	5 = Strongly agree
My friends in this neighborhood are part of my everyday activities.					
If there were a serious problem in this neighborhood, the people here could get together and solve it.					

Being a member of this neighborhood is like being a member of a group of friends.					
I don't care whether this neighborhood does well. (Reverse scoring is used for this item.)					
I have no friends in this neighborhood on whom I can depend. (Reverse scoring is used for this item).					

Evaluating Community Cohesion

In all cases, it is essential that neighborhood and community studies be backed up with direct observation and possibly other research measures. A field trip should be conducted through the neighborhood to observe variables that may be associated with community cohesion. Look for evidence of informal social interaction and interdependence (e.g., is there a Neighborhood Watch program?), pedestrian activity (e.g., are sidewalks readily used?), children at play, predominance of single family dwellings or apartments with courtyards, shared parking lots and yards of a housing complex, condition of houses, parks, and other community facilities. However, interpretations of such observations should be made with caution as these variables do not always correlate strongly with community cohesion. Wherever possible, these observations should be documented over a period of time and validated through the public involvement process. See Appendix B for a set of sample survey questions that would be useful in measuring community cohesiveness.

If residents, either individually or through their representatives, express particular concern for their neighborhood at public meetings or through other forums, this may be an indicator of a cohesive community, especially if such attitudes are voiced by a cross section of residents that may be affected by a proposal.

Community facilities contribute in many ways to community cohesion. Community facilities are those services and institutions that the local population relies on for their health and welfare and as a means to interact with other members of the community. Community facilities include schools, libraries, recreation facilities, health providers, emergency services, community centers, boys and girls clubs, and other similar institutions. The severity of the impact of the transportation project on community cohesiveness will depend on how much the community uses and relies on the facility, and the degree to which the project will impede or enhance the ability of residents to access the facility. Facilities that are frequently accessed by the elderly, disabled, low-income, and minority populations, are especially important because these groups often have limited mobility and may depend on transit to access the facilities.

Relocating a community facility far from the community it serves may result in that facility no longer being able to meet its mission or an inability to raise funds for continued operation because it has lost a large portion of its client base. The reverse could be true if the facility were relocated to a more desirable or more convenient location. Relocation impacts are discussed further in Chapter 7.

When it may be an issue, the impact assessment should describe the type, size (capacity, acreage, floor space), and location of public services and facilities within the affected socioeconomic environment. As part of their regular studies, Caltrans right-of-way staff compiles information on public and community service facilities affected by proposed projects so it may be beneficial to contact them.

Analysis Techniques

The next step after evaluating community cohesion is to answer the question: "Will the project affect community cohesiveness?" Using the baseline data gathered during the development of the community profile (see Chapter 3), overlay mapping of alternative alignments, and information gathered in the analysis of relocation impacts (see Chapter 7), complete the following checklist, adopted from the Florida DOT *Community Impact Assessment, A Handbook for Transportation Professionals*. This checklist is a useful tool for conducting the analysis of potential impacts.

Checklist for Assessing Social Impacts

		Yes	No
1.	Will the project create a barrier that divides the neighborhood or limits access to all or part of the neighborhood?	☐	☐
2.	Will the project impact any special groups (such as the elderly, persons with disabilities, racial/ethnic/religious groups) within the neighborhood?	☐	☐
3.	Will the project reduce the amount of social interaction that occurs within the neighborhood?	☐	☐
4.	Will the displacement of residents resulting from the proposed project negatively affect the perceived quality of life in the neighborhood?	☐	☐
5.	Will the project affect access to, parking for, or result in the removal of, neighborhood facilities or services that are needed and valued by neighborhood residents (stores, parks, public services, schools)?	☐	☐
6.	Will the facilities and services subject to removal or relocation be able to remain in, or within proximity of, the neighborhood?	☐	☐
7.	Will the project result in an increase in noise, vibration, odor, or pollution that reduces social interaction in the neighborhood?	☐	☐
8.	Will communal areas (e.g., parks and playgrounds) used by residents be negatively affected by construction of the project?	☐	☐
9.	Will the availability and convenience of transit services be reduced as a result of the project?	☐	☐
10.	Will the project negatively affect pedestrian and non-motorized mobility with in the neighborhood?	☐	☐
11.	Will vehicular mobility within the neighborhood be negatively affected by this project?	☐	☐
12.	Will vehicular traffic increase on local streets as a result of the project?	☐	☐
13.	If vehicular traffic increases, will this create unsafe conditions for non-motorized transportation within the neighborhood?	☐	☐
14.	Will there be any changes to popular bicycle or pedestrian routes?	☐	☐
15.	Will "blind or isolated" areas be created that are difficult to monitor for criminal activity as a result of the project?	☐	☐
16.	Will emergency response routes be negatively impacted as a result of the project?	☐	☐

Source: Florida DOT, *Community Impact Assessment, A Handbook for Transportation Professionals*, 2000.

After completing the checklist for each project alternative, document your rationale for each answer. Documentation of the checklist results should include a discussion of whether the impact will be temporary or permanent and how the impacts vary among project alternatives. Particular attention should be paid to the rationale for all yes answers. Although the checklist does not result in a quantitative "score" that determines whether the project would have adverse social impacts, the more yes answers there are, the more severe the social impacts are likely to be.

The results of the analysis should be shared with the public and other stakeholders during the public involvement process and measures to avoid, minimize, and/or mitigate impacts should be developed cooperatively with affected parties.

5.2.2 Effects on Access and Circulation

While state highway projects typically improve regional access, they may also affect local access and circulation. The analysis of access and circulation impacts should evaluate whether the project would impede or enhance the ability of residents to move freely about the neighborhood. Beneficial impacts can include an increase in accessibility and a reduction in congestion. Though transportation can play a critical role in maintaining people's independence and provide access to community-based services, there is a whole range of side effects that also may need to be considered. For example, the construction of a freeway or expressway can result in the closing of cross streets and the creation of cul-de-sacs. As a result, access by some local residents to businesses and public services may become less convenient; however, the new facility may also have the effect of removing traffic from a neighborhood.

There are numerous examples that illustrate the importance of analyzing the effects of changes in access caused by new projects.

- For low-income, disabled, elderly residents, and possibly others, changes in access may become a serious problem.
- School attendance areas may have to be redrawn if the highway is a physical barrier for students.
- Local traffic may increase as residents travel longer distances on local streets to enter the freeway at the limited access points.
- Response times for emergency vehicles may lengthen with the closure of local cross streets and may shorten with improved highways.
- Pedestrian safety may also be affected, depending on changes in traffic. For example, a shoulder-widening project might eliminate sidewalks for several blocks in the vicinity of a school or along an arterial adjacent to which people walk or jog.
- Transit service may affected by the new freeway project. If the number of transit stops is reduced or modified, consider what this will do for the quality of life of low-income, disabled, elderly residents, and possibly others who may rely on the service.
- Businesses near highway connections may experience economic losses when ramps are closed temporarily in conjunction with project construction or maintenance activities. If a project would result in a ramp closure, the potential for business losses should be assessed.

(See Appendix E for details on the need to consider the economic impacts from temporarily closing freeway ramp access.)

Highway improvements can also improve local circulation. For example, a highway bypass can relieve congestion on city streets by rerouting through-traffic away from the central business district. This may, in turn, encourage residents to patronize local businesses rather than traveling to more remote shopping centers. However, bypasses can have a negative economic effect on businesses that are dependent on pass-by traffic.

Road or lane closures during project construction and barrier effects of the project can affect the ability of emergency service providers to access neighborhoods and may delay response times. On the other hand, emergency access and response times may be improved through project design that reduces congestion and improves access to neighborhoods.

A proposed project may affect residents without access to automobiles. If many residents of a neighborhood must walk to stores, a highway project that becomes a physical barrier may separate them from access to needed goods and services. A high level of pedestrian travel may be an indication of a potentially serious effect. Including a new bus stop location or a bike path in the project design could improve neighborhood mobility. A transportation project that results in increased traffic, wider roadways, and higher travel speeds may have an adverse effect on pedestrian and bicycle safety.

Analysis Techniques

Analysis of access and circulation impacts can be accomplished by reviewing project plans and through windshield surveys. Plan review and windshield surveys are conducted to determine if the project would have the following effects.

- Eliminate or restrict automobile or pedestrian access to stores, public services, schools, and other facilities. Pedestrian service areas are generally considered to be 1/4 to 1/2 mile in radius (roughly 1/2 to 1 km). Also, keep in mind that access may be temporarily hindered during construction activities.
- Increased or decreased traffic on local streets. For instance, would a new freeway result in higher traffic on local streets that provide access to or egress from the freeway connections? Determine if other streets would have less traffic as a result of the diversion.
- Result in more circuitous routing for emergency vehicles.
- Result in any reduction of transit service.
- Result in changes to popular bicycle or pedestrian routes.

Particular attention should be paid to the presence of elderly people or children. If there are a large number of older persons, try to identify potential situations where their safety may be affected. For example, studies have shown elderly people feel vulnerable when crossing on sidewalks next to overcrossings and bridges.

Detailed assessment methods are extremely time-consuming and should be utilized primarily in cases where accessibility is perceived as a major issue.

Systematic analysis techniques involve doing a small scale origin/destination (O/D) analysis within the affected communities. This level of analysis involves defining three components:

- Community boundaries
- Intensity and overlap of travel patterns
- Importance of the facility to users

Determining the overall importance of the facility to users requires an analysis of the attitudes and perceptions of the affected residents on the importance of the facilities and services for their social interactions, as well as actual patterns of their use (service areas, frequency of use, membership, etc.). This approach requires direct interviews with community residents or representatives of local institutions and agencies.

Social interaction analysis utilizes the patterns of movement to and from community facilities or neighborhood activity centers as a gauge of social interaction. At the simplest level of analysis, data collection involves taking surveys at each community facility (grocery store, clinic, and so forth) that was found to be important.

Users of the facility can be informally questioned as they arrive and depart as to the origin and destination of their trip, frequency of use, and so forth. Shopkeepers or employees of the public facility should also be questioned to determine when various population groups use the facility. To take one example, a neighborhood grocery store may be used by a number of distinct groups that arrive at different times and have different activity patterns. School children may arrive on weekdays after school and throughout the day on weekends; elderly residents may visit infrequently, except at the time of the month when pension or Social Security checks arrive.

5.2.3 Effects on Parking

Transportation improvement projects can change the number and/or location of parking spaces. These changes may be temporary, such as the removal of spaces during construction, including those used by the increased numbers of construction workers in the area. Permanent losses of parking spaces may occur when a new roadway is constructed, additional lanes are built on an existing facility, or even if there is a re-striping project if it displaces on- or off-street parking.

Loss of parking for customers and delivery trucks can affect businesses and the operation of hospitals, schools, and other public services. Some businesses, such as convenience stores, are highly dependent on adjacent parking. The problem can be exacerbated when the demand for parking rises as pass-by traffic increases on the improved roadway.

The loss of business-related parking may result in vehicles being parked on residential side streets, thus limiting neighborhood parking and access, and also increasing traffic on nearby streets. The loss of parking may create the need for construction of spaces at a more remote and less convenient location, and this, in turn, could affect business sales. Thus, parking impacts clearly may be both social and economic in nature.

Analysis Techniques

The analysis of parking impacts should incorporate the following steps:

- Consider the number of spaces that would be lost and the number of spaces remaining, the existing demand for those spaces, and the availability of replacement parking.
- Review project plans to determine the total number of parking spaces that may be removed. (Check with Caltrans right-of-way staff first to see whether they will address the issue in their studies.)
- Survey the area to see whether any business would lose a substantial portion of its customer parking spaces.
- Contact local merchants or the chamber of commerce regarding the effect of the potential loss of parking. Also be aware that some local jurisdictions require a set amount of parking for specific business categories. Information may be available from a local parking agency or local planning department.
- Consider the effect on businesses that are highly dependent on parking spaces.
- Determine if a loss of parking could result in overflow parking that would cause secondary impacts.
- Consider the effect on neighborhoods if commuter or business-related parking occurs on residential streets.
- If eliminating parking is unavoidable, identify and include a plan of mitigation.

5.3 Addressing Project Impacts

As explained in detail in Chapter 4, the FHWA approach for addressing a project's adverse effects, as outlined in the FHWA's *Community Impact Assessment: A Quick Reference for Transportation* (1996), identifies four methods for addressing potential impacts. Based on those four methods, the following are suggested approaches to avoid, minimize, mitigate, and enhance the social impacts of a transportation project.

- Avoid
    - Modify an alignment to avoid displacements and relocations.
    - Elevate or depress, or provide a cut-and-cover structure to avoid creating a barrier through a cohesive neighborhood.
- Minimize
    - Reduce the number of traffic lanes or right-of-way width.
    - Phase the project to avoid disruption.
    - Create a transportation management plan that addresses concerns related to access for pedestrians, bicyclists, school children, emergency providers, and others during construction periods.
    - Create or enforce hourly parking restrictions, residential parking stickers, and parking meters to prevent customers and/or commuters from overloading parking facilities and residential side streets.

- Mitigate
    - Create new structures such as pedestrian overcrossings.
    - Improve or add pedestrian facilities such as crosswalks, sidewalks, overcrossings, and traffic-calming devices.
    - Relocate a displaced business or community facility to a new location with improved accessibility.
    - Construct new parking facilities, including multi-level garages or the use of highway right-of-way for parking areas.
- Enhance
    - Provide trees, landscaping, sidewalks, public artwork, and street furniture as part of the project design.
    - Expand transit services and locations.
    - Provide a recreational opportunity such as a small park or a bicycle trail.

5.4 Additional Resources

- Betlyon, Brian and Beverly Ward. *Community Impact Assessment: Developing a Preliminary Community Profile Using Hard Data*. 2001. Accessed January 2011. Available at: http://contextsensitivesolutions.org/content/reading/preliminary-community-profile/resources/preliminary-community-profile/

- FHWA. *Project Planning, Development, Right of Way; Public Involvement; Mitigation and Enhancement Activities: Cypress Freeway Replacement Project, California Department of Transportation*. ND. Accessed January 2011. Available: http://www.fhwa.dot.gov/environment/ejustice/case/cypress.pdf.

- Florida Department of Transportation. *Community Impact Assessment, A Handbook for Transportation Professionals*. 2000. Accessed January 2011. Available at: http://www.dot.state.fl.us/research-center/Completed_Proj/Summary_EMO/FDOT_BB296_rpt.pdf

- Illinois Department of Transportation. *Community Impact Assessment Manual*. 2007. Accessed January 2011. Available at: *Community Impact Assessment Manual*

- Interorganizational Committee on Guidelines and Principles for Social Impact Assessment, *Guidelines and Principles for Social Impact Assessment*. U.S. Department of Commerce. National Oceanic and Atmospheric Administration. Washington, D.C. 1994. Accessed January 2011. Available at: http://www.nmfs.noaa.gov/sfa/social_impact_guide.htm

- University of South Florida and Federal Highway Administration, Community Impact Assessment Website. 2000. Accessed January 2011. Available at: http://www.ciatrans.net/index.shtml

- Weinreich, Peter and Wendy Saunderson. *Identity Structure Analysis*, Published in Analysing Identity, Volume 1, Part 2 December 2002, pages 7 – 76.